

Serial No. 10/803,087  
Docket No. PHCF-04015  
HIR.096

### **REMARKS**

Applicants gratefully acknowledge Examiner Zervigon for taking time from his busy schedule on July 17, 2006, to conduct a personal interview with Applicants' representative. During the interview, the Examiner made suggestions for a number of wording changes that he felt would distance the present invention from Okase.

Claims 1, 3-6, 8, 9, 11-14, and 16 are presently pending in the application.

It is noted that Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1, 3-6, 8, 9, 11-14, and 16 stand rejected either under 35 USC §102(b) as being anticipated by US Patent 5,592,581 to Okase or, alternatively, under 35 USC §103(a) as unpatentable over Okase.

Applicants respectfully disagree.

### **THE CLAIMED INVENTION**

As described in, for example independent claim 1, the present invention is directed to semiconductor film formation device. A reaction vessel includes a gas flow path to allow a source gas to pass through, and a substrate mount site upon which to mount a substrate is provided in the gas flow path inside the reaction vessel along a side thereof and located along a first side of the reaction vessel. A heater is disposed outside of the reaction vessel on the first side of the reaction vessel along which is located the substrate mount site inside the reaction vessel. A cooling device is disposed outside of the reaction vessel on a second side of the reaction vessel. The second side is substantially directly opposite to first side of the reaction vessel where the heater is located. The cooling device controls an internal temperature of the reaction vessel in a first section of the gas flow path where the substrate mount site is located.

A thermal conductivity adjusting member is disposed between the reaction vessel and

Serial No. 10/803,087  
Docket No. PHCF-04015  
HYR.096

the cooling device. The thermal conductivity adjusting member allows the first section along the gas flow path where the substrate mount is located to have a thermal conductivity different from that of a second section along the gas flow path, in order to lower a thermal diffusion effect of the source gas in the first section.

In another aspect of the present invention, a semiconductor film formation device as described in, for example claim 6, includes a semiconductor film formation device including a reaction vessel that includes a gas flow path to allow a source gas to pass through and a substrate mount site on a side surface of the reaction vessel to mount a substrate in the gas flow path. The substrate mount site is on a first side of the reaction vessel.

A heater is disposed outside of the reaction vessel on the same side of the reaction vessel as the substrate mount site is located (e.g., the first side), the heater thereby being close to the substrate mount site. A cooling device controls an internal temperature of the reaction vessel in a section of the gas flow path wherein the substrate mount site is located, the cooling device being disposed outside of the reaction vessel on a second side of the reaction vessel that is substantially directly opposite to first side of the vessel where the heater is located.

A wall thickness of the reaction vessel is smaller in the section along the gas flow path where the substrate mount site is located, thereby forming an interspace between the reaction vessel and the cooling device to lower a thermal diffusion effect of the source gas in the section of the gas flow at the location of the substrate mount site.

The prior art of record fails to satisfy the plain meaning of the description of even these independent claims, as that the language would be interpreted by one having ordinary skill in the art.

## THE PRIOR ART REJECTIONS

The Examiner alleges that Okase either teaches or renders obvious the present invention defined by claims 1, 3-6, 8, 9, 11-14, and 16, as shown in Figure 7.

However, as clarified by the wording of the claim amendments above, as believed to be consistent with Examiner Zervigon's very helpful suggestions, Applicants believe that the

Serial No. 10/803,087  
Docket No. PHCF-04015  
HIR.096

present invention is clearly distinguished from Okase.

Hence, turning to the clear language of the claims, in Okase there is no teaching or suggestion of: "... a reaction vessel that includes a gas flow path to allow a source gas to pass through, a substrate mount site upon which to mount a substrate being provided in the gas flow path inside the reaction vessel, said substrate mount site being located on a vessel surface of said reaction vessel, along a first side of said vessel surface thereof; a heater that is disposed outside of the reaction vessel on said first side along which the substrate mount site inside the reaction vessel is mounted; a cooling device that is disposed outside of the reaction vessel on a second side substantially directly opposite to the heater, said cooling device controlling an internal temperature of the reaction vessel in a first section of the gas flow path where the substrate mount site is located; and a thermal conductivity adjusting member that is disposed between the reaction vessel and the cooling device, wherein the thermal conductivity adjusting member allows the first section along the gas flow path where the substrate mount site is located to have a thermal conductivity different from that of a second section along the gas flow path, in order to lower a thermal diffusion effect of the source gas in the first section", as required by independent claim 1.

The remaining independent claims have similar language that clearly describes features that differ from the configuration shown in Okase.

## CONCLUSION

In view of the foregoing, Applicant submits that claims 1, 3-6, 8, 9, 11-14, and 16, all the claims presently pending in the application, are patentably distinct over the prior art of record and are allowable, and that the application is in condition for allowance. Such action would be appreciated.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned attorney at the local telephone number listed below to discuss any other changes deemed necessary for allowance in a telephonic or personal interview.

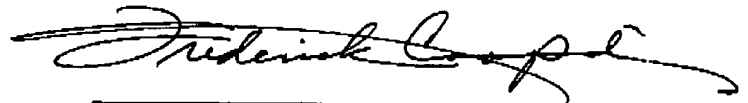
Serial No. 10/803,087  
Docket No. PHCF-04015  
HIR.096

To the extent necessary, Applicant petitions for an extension of time under 37 CFR §1.136.

The Commissioner is authorized to charge any deficiency in fees, including extension of time fees, or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: Aug. 21, 2006



Frederick E. Cooperrider  
Registration No. 36,769

**MCGINN INTELLECTUAL PROPERTY  
LAW GROUP, PLLC**  
8321 Old Courthouse Road, Suite 200  
Vienna, VA 22182-3817  
(703) 761-4100  
Customer No. 21254

CERTIFICATION OF TRANSMISSION

I certify that I transmitted via facsimile to (571) 273-8300 this Amendment under 37 CFR §1.111 to Examiner R. Zervigon on August 21, 2006.



Frederick E. Cooperrider  
Reg. No. 36,769